

Objective:

Operator level three is designed for individuals to trouble-shoot their WebCTRL system, using their knowledge gained from the other two level courses they will continue to build the skills necessary to identify system issues and correct them. After attending this course, a customer will be able to trouble-shoot ARCnet reconfigurations, understand the theory of token passing; perform module statuses identifying possible controller issues, physical connection of peripheral devices such as relays, sensors, and actuators, trouble-shoot various module level alarms and identify failed peripheral devices and what to do to correct them.

Prerequisites:

WebCTRL Operator Level 1 and WebCTRL Operator Level 2 or 6 months field experience installing and setting up a WebCTRL system

Day 1:**Control Module Applications**

Detail overview of the Automated Logic Hardware and the typical applications of each control module type. This discussion will include Exec. B.x (ME-line, SE-line, ZN-line, RC-line) if the attendees system configuration includes older control modules they will also be added to this discussion

Network configuration

Discussion of basic network configurations including wiring guidelines and device locations for ARC156 network configurations

Module addressing discussion

ARC156 Control Module Communications

Overview of the ALC Token Pass communication protocol (how the modules communicate with one another)

Discussion and observation of the Transmit and Receive LEDs on each module

Exercise in trouble-shooting ARCnet reconfigurations

Discussion on configuring WebCTRL network points and how they affect communication speed; students will configure network points and learn how the refresh time works on the system

Day 2:**Module Start-up**

Discussion of and exercise in connecting a laptop computer to the LGR using the USB-Link kit which makes it easy to connect to control modules

Exercise in verifying communications using the WebCTRL Modstat manual command

Exercise in module addressing

Exercise in downloading control programs by performing a memory download

Exercise in hard formatting modules

Overview of Technical Instructions

Overview of steps to take before repairing or replacing a module

Exercise in replacing a SE6104a

Exercise in adding a ZN341v+ (for exec. B.x customers), including how to address the module

Exercise in adding an AAR to the ARC156 network

Eikon Control Programming

Discussion of typical programming styles

Overview of most commonly used microblocks

Exercise de-bugging a control program

Day 3:

Input/Output Points and Field Devices

Discussion of physical connection of peripheral devices such as relays, sensors, and actuators, including references to Technical Instruction documents

Exercises in software configuration of points using the Checkout Commissioning tool

Exercise in connecting an actuator, a relay, and a sensor, and properly configuring it

Air Flow Microblock

Discussion about the patented algorithm which provides fast response while minimizing overshoot and damper movements

Exercise performing test and balance using the properties within the Air Flow Microblock

Troubleshooting

Demonstration of various module level alarms and how to troubleshoot them

Demonstration of various WebCTRL error pop-up dialogs that are caused by a hardware problem and what to do to correct it

Demonstration of symptoms of failed peripheral devices and what to do to correct it

If time permits, open lab session where students can state specific errors they have seen and what could have caused them

Review and Conclusion